



## NuSirt Biopharma Presenting New Data at American Diabetes Association 75<sup>th</sup> Scientific Sessions

*Three poster presentations will summarize findings regarding the treatment of Type2 diabetes, non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH), and emerging research related to high cholesterol*

NASHVILLE, TENN. (June 6, 2015) – [NuSirt Biopharma](#), a company dedicated to improving the lives of those with chronic metabolic diseases, will present three posters featuring new research on its technology at the [American Diabetes Association 75<sup>th</sup> Scientific Sessions](#). The event is being held June 5-9, 2015, at the Boston Convention and Exhibition Center in Boston.

“We are excited to share promising research focused on new approaches to treating conditions including Type 2 diabetes, non-alcoholic fatty liver disease (NAFLD), non-alcoholic steatohepatitis (NASH), and high cholesterol,” said Joe Cook Jr., executive chair and president of NuSirt Biopharma. “By introducing leucine in innovative ways, NuSirt’s patented technology has the potential to increase the utility of existing drugs, improve their efficacy and thereby help millions of people impacted by these diseases.”

NuSirt’s three poster presentations are as follows:

- [Leucine-Metformin Synergy Activates the AMPK/Sirt1 Pathway to Increase Insulin Sensitivity in Skeletal Muscle and Glucose and Lipid Metabolism and Lifespan in \*C. elegans\*](#)
  - Abstract Number: 1237-P
  - Date and Time: Sunday, June 7, 2015, from 12:00 - 2:00pm
  - Location: Hall B

This poster will discuss the effectiveness of the company’s technology, which involves combining leucine with a widely prescribed diabetes medication, metformin, in treating Type 2 diabetes. In the study, the coupling of leucine and metformin demonstrated significant synergy that resulted in augmented insulin signaling in muscle cells as well as improvement in lifespan in a model organism (*C. elegans*).

A pre-clinical efficacy study regarding NuSirt’s patented combination of leucine and metformin is slated to be published in [Metabolism](#). This study demonstrated that the leucine and metformin combination enabled a dose reduction of 66 percent with improved efficacy and a dose reduction of 83 percent with comparable efficacy to standard metformin in diet-induced obese, diabetic mice.

Diabetes is [the seventh leading cause of death](#) in the U.S., and its complications include blindness, kidney failure and peripheral amputation. According to the American Diabetes Association, more than 29 million Americans have diabetes, and an additional 86 million Americans age 20 and older have prediabetes.

- [Leucine Synergizes with Phosphodiesterase 5 \(PDE5\) Inhibitors and Metformin to Reverse Hepatic Lipid Accumulation and Inflammation and Treat Non-alcoholic Fatty Liver Disease \(NAFLD\)](#)

- Abstract Number: 260-LB
- Date and Time: Sunday, June 7, 2015, from 12:00 - 2:00pm
- Location: Hall B

This poster will detail research evaluating the synergy of leucine, metformin and a PDE5 inhibitor, sildenafil, in diet-induced obese mice.

The results of this study showed that this triple combination reduced liver mass and liver fat by 38 percent and reversed NASH in mice, while the individual compounds or two-way combinations exerted little or no effect. Consequently, leucine combined with sub-therapeutic levels of metformin and sildenafil may have potential for the treatment of NAFLD and NASH. This is notable as there are no currently approved treatment options for NASH.

Non-alcoholic fatty liver disease (NAFLD) is a result of fat building up in the liver, preventing the organ's ability to remove toxins from blood. It affects [up to one third](#) of the general population. Although, there are no known causes for NAFLD, obesity, high cholesterol, diabetes, and high blood pressure are all considered risk factors.

Non-alcoholic steatohepatitis (NASH) occurs in [10 to 30 percent](#) of those with NAFLD. It occurs when the liver of a person with NAFLD becomes inflamed, causing severe liver cell damage. Over time, this can result in permanent scarring and hardening of the liver, which leads to cirrhosis. The consequences of cirrhosis include muscle wasting, fluid retention, intestinal bleeding, and liver failure.

Pending regulatory feedback, NuSirt plans to initiate a Phase 2A study to test the leucine, metformin and PDE5 inhibitor combination in humans later this year.

- [Leucine Amplifies the Effects of Nicotinic Acid on Hyperlipidemia and Atherosclerosis in LDLRKO-Mice](#)

- Abstract Number: 524-P
- Date and Time: Monday, June 8, 2015, from 12:00 - 2:00pm
- Location: Hall B

This poster will share results of the company's combination of leucine with nicotinic acid (NA) to treat high cholesterol.

Today, NA is an effective treatment for patients with high cholesterol. However, its use is limited due to side effects such as vasodilation and flushing. This mice study showed that leucine could amplify the effects of NA on hyperlipidemia and atherosclerosis in mice, which resulted in a decrease in the necessary concentration of NA by 75-95 percent without losing its efficacy. Lowering the dose of NA also could potentially reduce the adverse side effects of NA treatment.

According to the [Centers for Disease Control and Prevention](#), more than 71 million Americans (33.5 percent) have high low-density lipoprotein (LDL), or "bad" cholesterol. Individuals with

high cholesterol have approximately twice the risk of heart disease as those with lower levels. Currently, heart disease is the leading cause of death in the U.S.

“In each of these pre-clinical studies, we demonstrated compelling results for diseases that impact a large segment of the population when we paired leucine with existing pharmaceuticals,” said NuSirt Founder and Chief Scientific Officer Michael Zemel, Ph.D. “With continued exploration, we believe we have great potential to aid in the development of new treatment options for these diseases.”

**About NuSirt Biopharma, Inc.**

NuSirt Sciences, Inc., headquartered in Nashville, is dedicated to improving the lives of people living with chronic metabolic diseases. The company has a unique technology platform that uses a patented combination of leucine, an essential amino acid, and existing human medicines targeted at diseases that may be addressed by activating sirtuin pathways. In pre-clinical studies, these combinations have shown promise in preventing and treating metabolic diseases and enhancing the effectiveness of existing pharmaceuticals. For more information, please visit [www.nusirt.com](http://www.nusirt.com).

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